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**FIRE FACT NO. 055 CHECKLIST(s) : 99**

**TITLE : REQUIREMENTS FOR LP-GAS INSTALLATIONS BELOW GRADE**

**CHECKLIST ITEM(s) : 99-24**

**REFERENCE(s) : K.S.A. 31-133(a)**

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LP-gas (liquefied petroleum gas) is heavier than air and this characteristic makes below grade installations particularly hazardous. LP gas leaked from piping or equipment will collect in low places and may eventually be ignited. The resulting explosion hazard is what these measures are designed to mitigate. These engineering measures are the minimum requirements to lower the risk of explosion to a level acceptable by the Kansas State Fire Marshal.

The BEST mitigation measure is to REMOVE THE LP FROM BELOW GRADE.

*Research the financial differences between moving the installation and providing these protective measures before making an action decision.*

***PROTECTIVE MEASURES:***

- No obvious ignition sources within eighteen (18) inches of the floor.
- Detection equipment designed and installed to detect LP at the lowest level.
- The detection instrument shall alarm at 10% Lower Explosive Limit (LEL) and on alarm shall:
  - Actuate an alarm to alert facility personnel.
  - Actuate an automatic fail-safe (closes when there is a problem) fuel shut off valve.
  - Actuate a non-sparking exhaust fan designed and installed to pick up vapor/gas from the lowest level.
  - The system shall require a manual reset.
  - The system shall be maintained according to manufacturer's directions.

These pieces of equipment are similar to those commonly found in flammable liquid storage rooms. The installation shall be approved by the Kansas State Fire Marshal Office before completion. Check with your LP-gas supplier to locate/purchase this type of equipment.

